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Thorsten Enders

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NEW YORK, NY 10004

EXAMINER

ELLIOTT IV, BENJAMIN H

ART UNIT

PAPER NUMBER

2474

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/590,392	Applicant(s) ENDERS ET AL.	
	Examiner BENJAMIN ELLIOTT	Art Unit 2474	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-24 have been examined. Claims 1-10 have been previously canceled. Claims 11, 12, 16, and 17 have been amended. Claims 11-24 are pending.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/29/2010 has been entered.

Response to Arguments

3. Applicant's arguments filed 3/29/2010 have been fully considered but they are not persuasive.

Applicant argues United States Patent 6,404,326 B1 to Timmerman fails to disclose "transmitting information in an event window" (Remarks, page 6). Examiner respectfully disagrees. As set forth in MPEP 2111-2116, claims must be given their "broadest reasonable interpretation" as set forth in the Federal Circuit Court's *en banc* decision in *Phillips v. AWH Corp.*, 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005). The terms "time window", "event window" and "cycle" have been given their broadest reasonable interpretation read in light of the specification as is constructed within the

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claim. For points of clarity, Examiner respectfully suggests amending the independent claims to particularly point out and distinctly claim the subject matter which would further clarify the term “cycle” (Please see 35 USC § 112 rejection below). As such, the term “cycle” is simply the completed sequence of an event or activity. A duplex communication as disclosed by Timmerman is interpreted to encompass this meaning as well. It is further suggested the terms “cycle” or “each cycle” are broadly interpreted when read in light of the term “successive cycles” as disclosed in all independent claims. The term “successive cycles” inherently suggests that some previous cycle or completion of event or activity has taken place in the communication system.

The broadly interpreted limitation as it reads in the claim, “at least one event window for transmitting information in response to specific events” is interpreted to mean a window of time to send a response to an event. However, Timmerman discloses a series of window comparators that discern an event, such as a short in the primary communications bus. For instance, if the primary communications bus is shorted low, the secondary power bus will override the primary communications bus. The same is true if the primary communications bus is shorted high, wherein the comparators are set low (Timmerman: Col. 4, line 54 through Col. 5, line 20). Further, Timmerman discloses that communication between the master node and slave nodes may be full duplex, wherein the slave nodes send status information to the master node as well as receive commands from the master node (Timmerman: Col. 2, lines 19-27).

Applicant argues Timmerman fails to disclose the limitations disclosed in claims 21-24, wherein Timmerman does not teach or suggest “splitting transmissions cycles

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into time windows and event windows, while redundantly transmitting only information that is included in the time windows, but not the event windows.” (Remarks, page 7).

Examiner respectfully disagrees. Based on the preceding base claims 11, 12, 16, and 17, each “cycle” comprises both an “at least one time window” and “at least one event window” wherein “at least some information” is transmitted **both** via the data bus structure and the power line structure”. As interpreted, the data bus structure **and** the power line structure are transmitting information, wherein the term “information” is used throughout the claim construction. Dependent claims recite “the power line structure is **not used** to transmit **information that is also transmitted** during the at least one event window. The claims, as interpreted, appear to contradict one another. The term “information” as it used throughout the claim is also given a broadest reasonable interpretation since the term may be used to describe data related to time windows, event windows, information carried along data buses, or information carried along power line structures. Examiner respectfully suggests amending the claims in such a way as to clarify to what the “information” is related, for example, “a first set of information carried along the data bus”, “a second set of information carried along the power line structure”, “said first information transmitted in at least one time window”, or “said second information transmitted in event window”.

Applicant argues Timmerman is silent on duplicate transmission of information over the data bus structure and the power line structure. As a means for clarification, Examiner points to Col. 5, lines 45-51 of Timmerman. Data may be sent across the

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primary communications bus and the secondary power bus *simultaneously*. This is to avoid interference for the receiver circuitry.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 11-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) Claim 11 recites the term “each cycle” in lines 5-6. There is insufficient antecedent basis for this term. Examiner points to the term “successive cycles” which is disclosed before the term “each cycle”.

b) Claims 13-15 and 21 are rejected as being dependent upon a rejected base claim, and for not further clarifying the deficiencies in the base claim.

c) Claim 12 recites the term “each cycle” in line 8. There is insufficient antecedent basis for this term. Examiner points to the term “successive cycles” which is disclosed before the term “each cycle”.

d) Claim 22 is rejected as being dependent upon a rejected base claim, and for not further clarifying the deficiencies in the base claim.

e) Claim 16 recites the term “each cycle” in line 7. There is insufficient antecedent basis for this term. Examiner points to the term “successive cycles” which is disclosed before the term “each cycle”.

f) Claims 18-20 and 23 are rejected as being dependent upon a rejected base claim, and for not further clarifying the deficiencies in the base claim.

g) Claim 17 recites the term "each cycle" in line 8. There is insufficient antecedent basis for this term. Examiner points to the term "successive cycles" which is disclosed before the term "each cycle".

h) Claim 24 is rejected as being dependent upon a rejected base claim, and for not further clarifying the deficiencies in the base claim.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

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were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 11-12, 15-17, and 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Publication 2001/0021196 A1 to Weigl et al. (hereinafter "Weigl") in view of US Patent 6,404,326 B1 to Timmerman et al. (hereinafter "Timmerman").

Regarding Claim 11, Weigl discloses a method for transmitting information in a motor vehicle among electrical components of the motor vehicle (Weigl: [0002]. The use of CAN (controller area network) is used to communicate information in motor vehicles.), **which are connected to a data bus structure of the motor vehicle in order to transmit information** (Weigl: [0007]. Information is transmitted along a data bus structure.), **comprising:**

transmitting the information in successive cycles over the data bus structure (Weigl: [0007]. Information is transmitted at a specific time interval.), **each cycle including at least one time window for transmitting information at specific points in time** (Weigl: [0013]. The reference message and timing window form cycles of a specifiable structure.).

Weigl is silent on a power line structure bus and transmitting information over the power line based on a specific event.

However Timmerman discloses **a power line structure of the motor vehicle in order to be supplied with power** (Timmerman: Col. 1, lines 59-63. A master node communicates via one bus and transfers power via a separate bus.). Timmerman further discloses **and at least one event window for transmitting information in response to specific events** (Timmerman: Col. 2, lines 6-10. An event can be from a remote slave node such as seat adjustment.).

Timmerman also discloses **and contemporaneously with transmitting of the information in the at least one time window, transmitting at least one portion of the information transmitted in the at least one time window over the power line structure thereby causing redundant information transmission** (Timmerman: Col. 2, lines 12-16. Information may be transmitted over the secondary power bus. Col. 2, lines 17-19. The secondary power bus has the capability of redundant communication. Col. 5, lines 45-51 of Timmerman. Data may be sent across the primary communications bus and the secondary power bus *simultaneously*. This is to avoid interference for the receiver circuitry.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Weigl to include redundant communications through a power line structure as taught by Timmerman. This would benefit the system by providing backup to a failed communication between a remote

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node in the vehicle to the communication structure of the vehicle (Timmerman: Col. 1, lines 37-41).

Regarding Claim 12, Weigl discloses **a method for transmitting information in a motor vehicle among electrical components of the motor vehicle** (Weigl: [0002]. The use of CAN (controller area network) is used to communicate information in motor vehicles.), **which are connected to a data bus structure of the motor vehicle in order to transmit information** (Weigl: [0007]. Information is transmitted along a data bus structure.), **comprising:**

wherein the information is transmitted in successive cycles over the data bus structure (Weigl: [0007]. Information is transmitted at a specific time interval.), **each cycle including at least one time window for transmitting information at specific points in time** (Weigl: [0013]. The reference message and timing window form cycles of a specifiable structure.).

Weigl is silent on a power line structure bus, transmitting information over the power line based on a specific event, and transmitting information at the same time over the data bus structure and the power line structure.

However Timmerman discloses **a power line structure of the motor vehicle in order to be supplied with power** (Timmerman: Col. 1, lines 59-63. A master node communicates via one bus and transfers power via a separate bus.). Timmerman further discloses **and at least one event window for transmitting information in response to specific events** (Timmerman: Col. 2, lines 6-10. An event can be from a remote slave node such as seat adjustment.).

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Timmerman also discloses **at least one portion of the information transmitted in the at least one time window over the data bus structure is transmitted over the power line structure contemporaneously with transmitting of the information in the at least one time window** (Timmerman: Col. 2, lines 12-16. Information may be transmitted over the secondary power bus. Col. 2, lines 17-19. The secondary power bus has the capability of redundant communication. Col. 5, lines 45-51 of Timmerman. Data may be sent across the primary communications bus and the secondary power bus *simultaneously*. This is to avoid interference for the receiver circuitry.). Timmerman goes on to disclose **transmitting at least some information both via the data bus structure and via the power line structure, in order to provide redundant information transmission** (Timmerman: Col. 5, lines 45-48. Information may be simultaneously sent through the primary data bus and the secondary power bus.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Weigl to include redundant communications through a power line structure as taught by Timmerman. This would benefit the system by providing backup to a failed communication between a remote node in the vehicle to the communication structure of the vehicle (Timmerman: Col. 1, lines 37-41).

Regarding Claim 16, Weigl discloses **a communications system for a motor vehicle, the motor vehicle including a plurality of electrical components** (Weigl: [0002]. The use of CAN (controller area network) is used to communicate information in motor vehicles. [0007]. Communication is between at least two users.), **a data bus**

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structure to which the components are connected for transmitting information among the components (Weigl: [0007]. Information is transmitted along a data bus structure.), **the communication system comprising:**

an arrangement configured to transmit the information in successive cycles over the data bus structure (Weigl: [0007]. Information is transmitted at a specific time interval.), **each cycle including at least one time window for transmitting information at specific points in time** (Weigl: [0013]. The reference message and timing window form cycles of a specifiable structure.).

Weigl is silent on a power line structure bus and transmitting information over the power line based on a specific event.

However Timmerman discloses **a power line structure of the motor vehicle in order to be supplied with power** (Timmerman: Col. 1, lines 59-63. A master node communicates via one bus and transfers power via a separate bus.). Timmerman further discloses **and at least one event window for transmitting information in response to specific events** (Timmerman: Col. 2, lines 6-10. An event can be from a remote slave node such as seat adjustment.). Timmerman also discloses **redundantly transmit at least some of the information transmitted in the at least one time window over the data bus structure over the power line structure, wherein the redundant transmission occurs contemporaneously with the transmitting of the information in the at least one time window** (Timmerman: Col. 2, lines 12-16.

Information may be transmitted over the secondary power bus. Col. 2, lines 17-19. The secondary power bus has the capability of redundant communication. Col. 5, lines 45-

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51 of Timmerman. Data may be sent across the primary communications bus and the secondary power bus *simultaneously*. This is to avoid interference for the receiver circuitry.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Weigl to include redundant communications through a power line structure as taught by Timmerman. This would benefit the system by providing backup to a failed communication between a remote node in the vehicle to the communication structure of the vehicle (Timmerman: Col. 1, lines 37-41).

Regarding Claim 17, Weigl discloses **a communications system for a motor vehicle, the motor vehicle including a plurality of electrical components** (Weigl: [0002]. The use of CAN (controller area network) is used to communicate information in motor vehicles. [0007]. Communication is between at least two users.), **a data bus structure to which the components are connected in order to transmit information among the components** (Weigl: [0007]. Information is transmitted along a data bus structure.), **the communication system comprising: the information being transmitted in successive cycles over the data bus structure** (Weigl: [0007]. Information is transmitted at a specific time interval.), **each cycle including at least one time window for transmitting information at specific points in time** (Weigl: [0013]. The reference message and timing window form cycles of a specifiable structure.).

Weigl is silent on a power line structure bus, transmitting information over the power line based on a specific event, and transmitting information at the same time over the data bus structure and the power line structure.

However Timmerman discloses **a power line structure of the motor vehicle in order to be supplied with power** (Timmerman: Col. 1, lines 59-63. A master node communicates via one bus and transfers power via a separate bus.). Timmerman further discloses **and at least one event window for transmitting information in response to specific events** (Timmerman: Col. 2, lines 6-10. An event can be from a remote slave node such as seat adjustment.). Timmerman also discloses **redundantly transmitting at least some of the information transmitted in the at least one time window over the data bus structure over the power line structure, wherein the redundant transmission occurs contemporaneously with the transmitting of the information in the at least one time window** (Timmerman: Col. 2, lines 12-16. Information may be transmitted over the secondary power bus. Col. 2, lines 17-19. The secondary power bus has the capability of redundant communication. Col. 5, lines 45-51 of Timmerman. Data may be sent across the primary communications bus and the secondary power bus *simultaneously*. This is to avoid interference for the receiver circuitry.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Weigl to include redundant communications through a power line structure as taught by Timmerman. This would benefit the system by providing backup to a failed communication between a remote

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node in the vehicle to the communication structure of the vehicle (Timmerman: Col. 1, lines 37-41).

Regarding Claims 15 and 20, Weigl discloses **the method and system as recited in claim 11 and claim 16, wherein the information is transmitted over the data bus structure in accordance with a Time-Triggered Protocol (TTP)** (Weigl: [0003]. A well-known communication protocol in a bus structure is TTP/C.).

Regarding Claims 21-24, as applied to claims 11, 12, 16, and 17, respectfully, Weigl in view of Timmerman discloses **the method of claims 11 and 12 and the communication system of claims 16 and 17, wherein the power line structure is not used to transmit information that is also transmitted during the at least one event window** (Timmerman: Col. 1, lines 59-62. The primary communications bus transmits information, and the secondary power bus transfers power to the slave nodes.¹⁰Col. 5, lines 51-55. Data is transmitted over the secondary power bus when the primary bus fails.).

10. Claims 13-14 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weigl and Timmerman, and further in view of Applicants' admitted prior art of US Patent Publication 2007/0286225 A1 to Enders et al. (hereinafter "AAPA").

Regarding Claims 13 and 18, Weigl discloses using CAN but is silent on TTCAN, as well as Timmerman.

However, AAPA discloses **the method and system as recited in claim 11 and claim 16, wherein the information is transmitted over the data bus structure in accordance with a Time-Triggered Controller Area Network (TTCAN) protocol** (AAPA: [0008-0009]. One communication protocol developed in the past to transmit information in a motor vehicle is TTCAN.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method and system of Weigl and Timmerman to improve upon CAN protocol by using TTCAN protocol as taught by AAPA as it is well-known in the art to use TTCAN as disclosed by Applicant. This would improve the system by enabling CAN-based networks to be used in safety critical environments (AAPA: [0009].).

Regarding Claims 14 and 19, Weigl and Timmerman are silent on using the FlexRay protocol.

However, AAPA discloses **the method as recited in claim 11 and claim 16, wherein the information is transmitted over the data bus structure in accordance with a FlexRay protocol** (AAPA: [0013]. FlexRay is a communications protocol that may be used in safety-critical environments, as well. [0008]. FlexRay is one of the communication protocols that have been developed in the past.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method and system of Weigl and Timmerman to include the FlexRay protocol as taught by AAPA as it is well-known in the art to use FlexRay as disclosed by Applicant. This would benefit the system by

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rendering a synchronous and asynchronous transmission of messages between nodes and the data structure (AAPA: [0013]).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENJAMIN ELLIOTT whose telephone number is (571)270-7163. The examiner can normally be reached on Monday thru Friday, 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung Moe can be reached on (571)272-7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aung S. Moe/
Supervisory Patent Examiner, Art Unit 2474

BENJAMIN ELLIOTT
Examiner
Art Unit 2474

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